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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/177,427	10/22/1998	STEFAN LUKAS	4804-4	3113

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EXAMINER	
MITCHELL, GREGORY W	

ART UNIT	PAPER NUMBER
1617	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/177,427	LUKAS ET AL.	
	Examiner	Art Unit	
	Gregory W Mitchell	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-30* is/are rejected.

7)☒ Claim(s) *16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the remarks and amendments filed April 26, 2004. Applicant has amended claims 16, 19-26, 29 and 30. Claims 16-30 are pending and are examined herein. Claims 1-15 have been cancelled.

Claim Objections

Claim 16 is objected to because of the following informalities: it claims a "spray dried *power*" instead of a "spray dried *powder*". Appropriate correction is required.

Response to Arguments/Amendments

Applicant's amendments filed April 26, 2004 are sufficient to overcome Examiner's objection to claims 29 and 30.

Applicant's arguments filed April 26, 2004 regarding the 35 U.S.C. 103 rejections of claims 16-30 have been fully considered but they are not persuasive for reasons set forth in the office action dated October 23, 2003 and in view of the following:

103 Rejections Maintained

Claims 16-25 and 27-30 were rejected under 35 U.S.C. 103 as unpatentable over Morella et al. (CA 2068366) in view of Douglas et al. (USPN 5635200).

Applicant argues that "prior to the present invention, the preferred method of production of microcapsules was by spray drying from a solution. However, that method would not produce a coating powder having sustained release properties." This argument is not convincing because as Examiner noted in the previous office action, Morella et al. teaches a powder obtained by spray drying a solution of ethylcellulose and paracetamol to obtain a powder capable of exhibiting taste masking and sustained

release of paracetamol. Example 1 of Morella et al. (pp. 17-18) indicates "the product will have adequate protection in the mouth ... <30% released in 40 min. at pH 6.8." Accordingly, the prior art *does* teach a method of preparing a coating powder having sustained release properties.

Applicant also argues that the instant invention is novel by stating, "the powders of the present invention provide sustained release properties when *compared to non-coated* products" (emphasis added). This argument is not persuasive because Examiner is not rejecting the instant claims over a non-coated product, but the coated product of Morella et al. in view of Douglas et al.

Applicant further argues the novelty of the instant invention lies in Applicant's discovery of the fact that both particle size and shape were important parameters in controlling the rate of drug release. Applicant states that "it was found that needle shaped particles produced material where 19% of the material was released after 40 minutes which is unacceptably high. In contrast, the more homogeneous batch D4427 demonstrated 8% release after 40 minutes." These arguments are not persuasive. Examiner noted in the previous office action that Morella et al. teaches that the aspect ratio of the instant invention is within the scope of the invention taught by Morella et al., wherein the breadth of the particle was 0.1-250 microns and the thickness was 0.005-25 microns. Furthermore, Examiner relies on the supporting reference, Douglas et al., to teach that spherical particles (an aspect ratio of 1) are preferred. Accordingly, it is Examiner's position that the substantially spherical particles of Applicant's invention are (1) within the scope of the invention taught by Douglas et al.; and (2) in view of Douglas

et al., it would have been obvious to one of ordinary skill in the art to use the preferred spherical particle shape. The motivation for preparing compositions comprising spherical particles need not be the same in the prior art as in the instant invention. It is only necessary that it would have been obvious to make and use a composition comprising particles of substantially spherical shape and that one would have been motivated to do so. As taught by Douglas et al., the spherical shape of the particles is preferred because the presence of the irregular shaped particles reduces the effectiveness of subsequent over-coating procedures in masking the bitter taste of the active ingredient (col. 5, lines 8-15).

Applicant argues, "The spray drying process as described in the present application as understood by one skilled in the art involves the dispersion of the active constituents and the polymeric coating in a solvent followed by the evaporation of the solvent through the use of a spray dryer." It is Examiner's position that this recitation does not distinguish it from the prior art. Applicant's attention is drawn to Example 1 of Morella et al. which states, "[a]cetaminophen was dispersed in a solution of ethyl cellulose in dichloromethane and spray dried ..." It is Examiner's position that these methods are identical. Applicant further states, "Generally, the solubility of the drug to be used in the solvent is lower than the solubility of the coating agent in the solvent;" and "in some cases of spray drying the solvent is chosen so as not to dissolve the active ingredient at all ..." Examiner does not find this recitation convincing because such limitations do not appear in either the composition or the method claims.

Applicant further argues that despite the fact that Morella et al. teaches a preferred coating of 10-80% w/w that it would not have been obvious to prepare a composition comprising less than 23% w/w material. Applicant argues that because Example 6, incorporating a coating weight of approximately 27% w/w, resulted in a porous composition that exhibited little taste masking that the lower end of Morella et al.'s preferred range is non-functional. Examiner does not find this argument persuasive. It is pointed out that Example 6 is a comparative example. The composition of Example 6 was prepared using the standard coating method, not the coating method preferred in Morella et al. Morella et al. teaches on page 14 that the drying gas dew point is preferably less than -15 °C (dry air) and that it is more preferably between -25 °C and -30 °C. Example 6 is an illustration of a composition prepared using ambient air, not dry air. Accordingly, it is not descriptive of the release rate and taste masking of the compositions of Morella et al.'s invention. Example 5 is a more appropriate example, as it illustrates the difference between the comparative examples and the examples pertaining to the invention of Morella et al. In Example 5, Morella et al. teaches two preparations, one prepared as described in Example 1 and one prepared utilizing "ambient air" as the drying gas. Furthermore, Example 5 shows a composition prepared using about 28% coating agent. Example 5 also compares the compositions prepared when the drying agent is dry air and when the drying agent is ambient air in Figures 5a and 5b. The coating of the composition prepared utilizing dry air as the drying agent is smooth, whereas the composition prepared utilizing ambient air is porous. Figure 6 illustrates the relative release rats of a composition prepared by

using air with a dew point less than -15 °C (dry air) versus a composition prepared using ambient air. It is shown that the use of dry air as the drying gas produces a composition with a release rate about half of that of a composition prepared utilizing ambient air. Accordingly, it is Examiner's position that it would have been obvious to utilize coating agents within the full scope of the weight percentage range taught to be preferred by Morella et al. because at coating weight percentages as low as 28%, the compositions were observed to be effective at controlling release rates from the microcapsules.

Applicant argues that "none of the reference examples appear to illustrate a dosage form wherein the coating weight is as little as 10% or even less than the limit ("23%") now set forth in the pending claims." Applicant further argues that "CA '366 does no more than confirm Applicant's statement on page 1, lines 28 to page 2, line 3, of the specification that coating weights less than 24% gave unsatisfactory taste masking when that dosage form was produced by spray drying procedures." These arguments are not compelling for the reasons set forth above, namely that Morella et al. did show an example of a preparing a formulation of the invention described therein (Example 5) with 28% w/w coating material. Applicant's invention is, as stated in the Abstract, a taste-masked free-flowing powder including microcapsules. Accordingly, it is Examiner's position that it would have been obvious to one of ordinary skill in the art to prepare coated formulations within the full scope of the preferred range (i.e. 10-80% coating material by weight).

Applicant argues that it would not have been obvious to utilize particles with an aspect ratio of about 1 (i.e. substantially spherical) because "the coating weights of

Douglas far exceed the upper limits specified in the pending claims." Examiner does not find this argument convincing because Examiner is not relying on Douglas to establish obviousness of the coating weights. Examiner has used Douglas as evidence to show that it would have been obvious to utilize formulations comprising particles with a spherical shape. It is Examiner's position that one of ordinary skill in the art would be motivated to combine the spherical particles of Douglas with the formulation of Morella et al. because each invention is drawn to a formulation comprising a coated particle and is directed to an invention wherein the masking of a taste is desired, the difference in weight percentage of the coating material notwithstanding. The two teachings are analogous; there is no need that the teachings be identical in order to make a case for obviousness.

Claim 26 was rejected under 35 U.S.C. 103 as unpatentable over Morella et al. (CA 2068366) and Douglas et al. (USPN 5635200) and further in view of either Yajima et al. (USPN 5707646) or Lu et al. (USPN 4808411).

Applicant first argues that Yajima et al. and Lu et al. are not relevant because they do not teach the relevant coating weight percentage. This argument is not persuasive because Examiner is not relying on Yajima et al. or Lu et al. in order to determine the weight percentage of the coating material, but that it would have been obvious to prepare a formulation wherein clarithromycin was encapsulated by the coating material. Applicant next argues that Yajima et al. and Lu et al. cannot be combined with Morella et al. and Douglas et al. because the processes of preparing the compositions therein are not identical to those of the instant invention. This argument is

not persuasive because Examiner is not relying on Yajima et al. and Lu et al. in order to render a method of making a given formulation obvious. Examiner is relying on Yajima et al. and Lu et al. to show that it is desirable to mask the taste of and achieve sustained release of clarithromycin. Furthermore, Yajima et al. and Lu et al. teach that clarithromycin is suitable for administration in particles that contain a polymer coating. Therefore, it is Examiner's position that these references are of an analogous art to both Morella et al. and Douglas et al. Morella et al. states that the each microcapsule of the invention taught therein includes an effective amount of a core element including at least one pharmaceutically active ingredient. Morella et al. further states that the purpose of the microcapsule is to mask the taste of and provide a reduced dissolution profile of the encapsulated material. See Abstract. Accordingly, it is Examiner's position that it would have been obvious to one of ordinary skill in the art to encapsulate a pharmaceutical in a manner rendered obvious by the combination of Morella et al. and Douglas et al. wherein it would have been desirable to provide sustained release and taste masking of said pharmaceutical. Yajima et al. and Lu et al. teach that clarithromycin is such a pharmaceutical.

Response to Declaration

Applicant argues that Morella et al. does not teach the critical factor of particle shape. Examiner points out that Douglas et al. is combined with Morella et al. for that very reason. Examiner notes that Douglas et al. requires particles of a specific shape and size. Douglas et al. further states that the shape should be spherical and that irregularly shaped particles reduce the effectiveness of masking the bitter taste of a

drug. Accordingly, it is Examiner's position that it would have been obvious to one of ordinary skill in the art to combine the preferred shape of Douglas et al. with the preferred formulation of Morella et al. because they are both directed to a formulation prepared for the express purpose of masking the taste of the encapsulated drug (and providing sustained release of said drug).

Applicant also argues that Lu et al. does not teach the critical factor of particle shape. For the reasons described above, this argument is not persuasive.

Applicant also discusses the requirements of coating systems, atomization, drying environment and composition and physical attributes of the drying gas. It is pointed out that these requirements are not a part of the claims. Claims 16-26 are drawn to formulations, not to processes of preparing said formulations. Claims 27-30 are drawn to methods of preparing said formulations but are limited not by the parameters described by Applicant but by the characteristics of the resulting product. Since it is Examiner's position that the resulting formulation would have been obvious in view of the references cited herein, it is Examiner's position that it would have been obvious to prepare such a formulation.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory W Mitchell whose telephone number is 571-272-2907. The examiner can normally be reached on M-F, 8 AM - 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gwm

SREENI PADMANABHAN
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